



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,741	03/23/2007	Toshitaka Funazukuri	0234-0515PUS1	8885

2292 7590 04/20/2009
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

BLAND, LAYLA D

ART UNIT	PAPER NUMBER
----------	--------------

1623

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

04/20/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/579,741	Applicant(s) FUNAZUKURI ET AL.	
	Examiner LAYLA BLAND	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 24, 2008 has been entered.

This Office Action is in response to Applicant's request for continued examination (RCE) filed December 4, 2008, and amendment and response to the Final Office Action (mailed August 4, 2008), filed November 24, 2008 wherein claims 1, 3, and 4 are amended and claims 2 and 7 are canceled.

Claims 1 and 3-6 are pending and are examined on the merits herein.

In view of the cancellation of claims 2 and 7, all rejections made with respect to those claims in the previous office action are withdrawn.

In view of Applicant's amendment submitted November 24, 2008, the prior art rejections over Puri et al. are withdrawn. The claims now require the polysaccharide to be starch, agar, or guar gum and the cited references do not teach starch, agar, or guar gum.

The following are new or modified rejections:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Puri et al. (Biotechnology and Bioengineering, vol. XXV, pp. 3149-3161 (1983)) as evidenced by Linde et al. (Biomass and Bioenergy 32 (2008) 326-332).

Puri et al. teach a method wherein lignocellulosic material from bagasse, wheat straw, or eucalyptus was treated at 200°C at 3.45, 6.9, 10.3, or 13.9 MPa, with carbon dioxide added at 4.8 MPa from a cylinder [page 3150, Autohydrolysis-Explosion Pretreatment Method]. The use of carbon dioxide as a digester pressuring gas serves to overcome the low initial reaction rates associated with autohydrolysis [page 3154, second paragraph]. The method of Puri et al. operates at a lower temperature than steam explosion, which is expected to reduce decomposition [page 3154, last paragraph]. Higher partial pressure of carbon dioxide generates more carbonic acid, resulting in increased rates of hydrolysis [page 3158, first full paragraph]. Xylose and glucose were obtained [page 3159, first full paragraph].

Puri et al. are silent regarding whether bagasse, wheat straw, or eucalyptus contains starch, agar, or guar gum. However, it is considered very likely that this is so. For example, Linde et al. teach that wheat straw contains starch [page 329, Table 1]. Thus, starch was subjected to Puri's method.

Claims 1, 4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Moreschi et al. (6th International Symposium on Supercritical Fluids, April 28-30, 2003, obtained from <http://www.ensic.inpl-nancy.fr/ISASF/Docs/Versailles/Index.htm>.)

Moreschi et al. teach the hydrolysis of ginger starch in subcritical water [see abstract]. The reactor was filled with ginger bagasse and distilled water, the heating system was turned on until desired temperature was reached, and CO₂ was admitted into the reaction to reach the operating pressure. Pressure at 100 or 200 bar (10 or 20 MPa) and temperature at 140 and 180°C, with a central point at 150 bar and 160°C was used [page 2, Experimental Procedure]. Any temperature up to 188°C and pressure up to 220 bar is suitable for the best yield [page 5, Conclusion].

Claim Rejections - 35 USC § 103

Claims 3 and 5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Puri et al. (Biotechnology and Bioengineering, vol. XXV, pp. 3149-3161 (1983)).

Puri et al. teach as set forth above.

Puri et al. are silent regarding the carbon dioxide content in the liquid phase at the given conditions. This limitation is understood to be a function of the temperature and pressure conditions of the reaction; because Puri et al. teach the same reaction conditions, it is considered likely that the limitations of claims 3 and 5 are also met. Furthermore, it would be obvious to optimize these given the guidance given by Puri as

to the benefits of using carbon dioxide and rates of hydrolysis as a function of carbonic acid content.

Claims 3 and 5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moreschi et al. (6th International Symposium on Supercritical Fluids, April 28-30, 2003, obtained from <http://www.ensic.inpl-nancy.fr/ISASF/Docs/Versailles/Index.htm>).

Moreschi et al. teach as set forth above.

Moreschi et al. are silent regarding the carbon dioxide content in the liquid phase at the given conditions. This limitation is understood to be a function of the temperature and pressure conditions of the reaction; because Moreschi et al. teach the same reaction conditions, it is considered likely that the limitations of claims 3 and 5 are also met. Furthermore, it would be obvious to optimize this given the guidance given by Moreschi et al. regarding manipulation of pressure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAYLA BLAND whose telephone number is (571)272-9572. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anna Jiang can be reached on (571) 272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shaojia Anna Jiang/
Supervisory Patent Examiner, Art Unit 1623

/Layla Bland/
Examiner, Art Unit 1623